

Body Height of Children with Bronchial Asthma of Various Severities

Eliseeva T., Geppe N., Tush E., Khaletskaya O., Balabolkin I., Bulgakova V., Kubysheva N., Ignatov S.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2017 Tatiana I. Eliseeva et al. Influence of bronchial asthma (BA) severity on physical development in children patients was evaluated in comparison with healthy population. Materials and Methods. 1042 children and adolescents (768 boys) with atopic BA were evaluated. All children underwent standard examination in a clinical setting, including anthropometry. The control group included 875 healthy children of a comparable age (423 boys). Results. The fraction of patients with the normal, lower, and increased height among the whole group of patients with BA is close to the corresponding values in the healthy population ($\chi^2 = 3.32$, $p = 0.65$). The fraction of BA patients with the reduced physical development is increased monotonically and significantly when the BA severity increases: healthy group, 8.2% (72/875), BA intermittent, 4.2% (6/144), BA mild persistent 9% (47/520), BA moderate persistent, 11.7% (36/308), and BA severe persistent, 24.3% (17/70) ($\chi^2 = 45.6$, $p = 0.0009$). Conclusion. The fraction of the children with the reduced height is increased monotonically and significantly in the groups of increasing BA severities. At the same time, the fraction of such children in groups of intermittent and mild persistent BA practically does not differ from the conditionally healthy peers.

<http://dx.doi.org/10.1155/2017/8761404>

References

- [1] C. Giannini, A. Mohn, and F. Chiarelli, "Growth abnormalities in children with type 1 diabetes, juvenile chronic arthritis, and asthma," *International Journal of Endocrinology*, vol. 2014, Article ID 265954, 2014.
- [2] E. N. Wiesenthal, M. Fagnano, S. Cook, and J. S. Halterman, "Asthma and overweight/obese: double trouble for urban children," *Journal of Asthma*, vol. 53, no. 5, pp. 485-491, 2016.
- [3] T. I. Eliseeva, N. A. Geppe, S. K. Ignatov et al., "Relative body mass index as a new tool for nutritional status assessment in children and adolescents with bronchial asthma," *Sovremennye tehnologii v medicine*, vol. 9, no. 1, pp. 135-148, 2017.
- [4] M. Movin, F. L. Garden, J. L. P. Protudjer et al., "Impact of childhood asthma on growth trajectories in early adolescence: findings from the childhood asthma prevention study (CAPS)," *Respirology*, vol. 22, no. 3, pp. 460-465, 2017.
- [5] M. Monteiro-Antonio, J. D. Ribeiro, A. A. Toro, A. E. Piedrabuena, and A. M. Morcillo, "Linear growth evaluation of asthmatic children," *Revista da Associação Médica Brasileira*, vol. 48, pp. 145-150, 1992.
- [6] D. P. Skoner, "Inhaled corticosteroids: effects on growth and bone health," *Annals of Allergy, Asthma and Immunology*, vol. 117, no. 6, pp. 595-600, 2016.
- [7] G. Russell, "Asthma and growth," *Archives of Disease in Childhood*, vol. 69, no. 6, pp. 695-698, 1993.

- [8] P. C. O'Leary, E. McIntyre, P. Feddema, and P. N. LeSouef, "Effect of asthma treatment on urinary growth hormone excretion in children," *Pediatr Pulmonol*, vol. 21, no. 6, pp. 361-366, 1996.
- [9] C. De Leonibus, M. Attanasi, Z. Roze et al., "Influence of inhaled corticosteroids on pubertal growth and final height in asthmatic children," *Pediatric Allergy and Immunology*, vol. 27, no. 5, pp. 499-506, 2016.
- [10] D. Pandya, A. Puttanna, and V. Balagopal, "Systemic effects of inhaled corticosteroids: an overview," *The Open Respiratory Medicine Journal*, vol. 8, no. 1, pp. 59-65, 2014.
- [11] D. B. Allen, "Effects of inhaled steroids on growth, bone metabolism and adrenal function," *Expert Review of Respiratory Medicine*, vol. 1, no. 1, pp. 65-74, 2014.
- [12] V. Natale and A. Rajagopalan, "Worldwide variation in human growth and the World Health Organization growth standards: a systematic review," *BMJ Open*, vol. 4, no. 1, Article ID e003735, 2014.
- [13] E. Nazarova and Y. Kuzmichev, "The height-, weight-And BMIfor-Age of preschool children from Nizhny Novgorod city, Russia, relative to the international growth references," *BMC Public Health*, vol. 16, no. 1, article no. 274, 2016.
- [14] Global Initiative for Asthma. Archived Reports. Available from: <http://ginasthma.org/archived-reports/>.
- [15] A. D. Clift and A. Holzel, "Long-term therapy with sodium cromoglycate (intal, lomudal or aarane): effects and side effects," *Annals of Allergy*, vol. 41, no. 5, pp. 313-318, 1978.
- [16] E. Richmond and A.D. Rogol, "Endocrine responses to exercise in the developing child and adolescent," in *Sports Endocrinology*, F. Lanfranco and C. J. Strasburger, Eds., vol. 47, pp. 58-67, 2016.
- [17] M. Maniscalco, D. Paris, D. J. Melck et al., "Coexistence of obesity and asthma determines a distinct respiratory metabolic phenotype," *Journal of Allergy and Clinical Immunology*, 2015.